

Form 1449 (Modified)

Information Disclosure Statement By Applicant

(Use Several Sheets if Necessary)

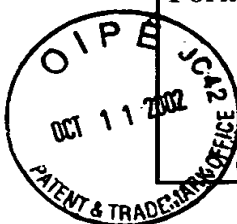
Atty Docket No. **AUD1P005**

Applicant: **HOU**

Filing Date **March 14, 2001**

Application No.: **09/808,694**

Group **2644**



U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
JM	1	3,836,732	09/17/1974	Johanson et al.			
	2	3,975,599	08/17/1976	Johanson			
	3	4,131,760	12/26/1978	Christensen et al.			
	4	4,712,244	12/08/1987	Zwicker et al.			
	5	4,751,738	06/14/1988	Widrow et al.			
	6	4,956,867	09/11/1990	Zurek et al.			
	7	5,325,436	06/28/1994	Soli et al.			
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	9	5,434,924	07/18/1995	Jampolsky			
	10	5,479,522	12/26/1995	Lindemann et al.			
	11	5,524,056	06/04/1996	Killion et al.			
	12	5,625,684	04/29/1997	Matouk et al.			
	13	5,737,430	04/07/1998	Widrow			
	14	5,740,256	04/14/1998	Castello Da Costa et al.			
	15	5,757,933	05/26/1998	Preves et al.			

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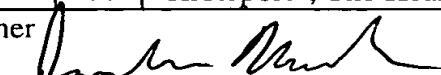
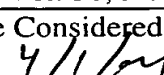
Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
JM	16	WO 99/03091	21 JAN 1999	WIPO/PCT			X	
	17	EP 0856833 A2	05 AUG 1998	EPO			X	
	18	11-220796	10 AUG 1999	JP			Abstract	
	19	63-002500	07 JAN 1988	JP			Abstract	

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JM	20	Glover, "A review of Cardioid Type Unidirectional Microphones", (Jan. 1940) J.A.S.A., Vol. 11, pp. 296-302.
	21	Killion et al., "The case of the missing dots: AI and SNR loss", (May 1998) The Hearing Journal, Vol. 51, No. 5, pp. 1-6.
	22	Gravel et al., "Children's Speech Recognition in Noise Using Omni-Directional and Dual-Microphone Hearing Aid Technology", Ear & Hearing, February 1999, pp. 1-11.
	23	Ricketts et al., "Comparison of Performance across Three Directional Hearing Aids", J Am Acad Audiol Vol. 10, 1999, pp. 180-189.
	24	Buerkli-Halevy, "The directional microphone advantage", Hearing Instruments, Vol. 38, No. 8, 1987.
	25	Preves, "Directional Microphone Use in ITE Hearing Instruments", The Hearing Rev., July 1997, pp. 21-27.
	26	Greenberg et al., "Evaluation of an adaptive beamforming method for hearing aids", J. Acoust. Soc. Am. 91 (3), March 1992, pp. 1662-76.



27	Agnew, "How multi-microphone arrays can improve directionality", The Hearing Journal, Vol. 50, No. 8, August 1997, pp. 34-46.
28	Roberts et al., "Measurement and Intelligibility Optimization of Directional Microphones for Use in Hearing Aid Devices", 103 rd Convention of Audio Engineering Society (AES), September 1997, 13 pp.
29	Desloge et al., "Microphone-Array Hearing Aids with Binaural Output – Part I: Fixed-Processing Systems", IEEE Trans. on Speech & Audio Proc., Vol. 5, No. 6, November 1997, pp. 529-42.
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31	Greenberg, "Modified LMS Algorithms for Speech Processing with Adaptive Noise Canceller", IEEE Trans. On Speech & Audio Proc., Vol. 6, No. 4, July 1998, pp. 338-51.
32	Van Tasell, "New DSP instrument designed to maximize binaural benefits", , The Hearing Journal, Vol. 51, No. 4, April 1998, pp. 40-49.
33	Edwards et al., "New digital processor for hearing loss compensation is based on auditory system", The Hearing Journal, Vol. 51, No. 8, August 1998.
34	Stadler et al., "On the potential of fixed arrays for hearing aids", J. Acoust. Soc. Am. 94 (3), Pt. 1, September 1993, pp. 1332-42.
35	Zurek et al., "Prospects and Limitations of Microphone-Array Hearing Aids", World Scientific, August 1995, pp. 233-44.
36	Killion et al., "Real-world performance of an ITE directional microphone", The Hearing Journal., Vol. 51, No. 4, April 1998, pp. 1-6.
37	Killion, "SNR Loss: 'I Can Hear What People Say, But I Can't Understand Them'", The Hearing Rev., Vol. 4, No. 12, December 1997.
38	Edwards et al., "Signal-processing algorithms for a new software-based, digital hearing device", The Hearing Journal, Vol. 51, No. 9, September 1998.
39	Killion, "The SIN report: circuits haven't solved the hearing-in-noise problem", The Hearing Journal., Vol. 50, No. 10, October 1997, pp. 28-31.
40	Cadalli et al., "Wideband Maximum Likelihood Direction Finding and Signal Parameter Estimation by Using the Tree-Structured EM Algorithm", IEEE Trans. On Signal Proc., Vol. 47, No. 1, January 1999, pp. 201-206.
41	Souza et al., "Quantifying the Contribution of Audibility to Recognition of compression-Amplified Speech", Ear & Hearing, Vol. 20, No. 1, February 1999, pp. 12-20.
42	microZOOM™, Marketing pamphlet, Phonak, 2 pgs.
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44	"HJReport", The Hearing Journal, Vol. 50, No. 8, August 1997, pp. 7-8.
<div>Examiner </div> <div>Date Considered </div>	

Examiner Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



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	Applicant: HOU	
	Filing Date March 14, 2001	Group 2644

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub- class	Filing Date

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Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub- class	Translation	
							Yes	No
<i>m</i>	1	EP 569216 A1	10.11.1993	EPO			X	
<i>j</i>	2	EP 982971 A2	20.08.1999	EPO			X	
<i>j</i>	3	06 269085	22.09.1994	EPO/JP			Abstract	

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>m</i>	4	International Search Report, EPO/ISA, re PCT/US01/08256, dated August 2, 2002
Examiner	Date Considered	
<i>James R. ...</i>	<i>8/1/04</i>	

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.